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Oral poster session 1: We can work it out

Tuesday 18 August
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Feeding chicory (*Cichorium intybus*) selectively reduces *Ostertagia ostertagi* infection levels in cattle

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Objectives: Studies were conducted to test the potential use of chicory against gastrointestinal nematode infections in cattle. **Methods:** In study 1, fifteen 2-4 months-old dairy calves were allocated into a chicory (CHI, n=9) or control (CTL, n=6) group. CHI and CTL were stabled and fed with chicory silage or hay, resp., *ad lib* for 56 days. Protein/energy intakes were equalized between groups throughout the study. After 14 days on the diet all calves were infected with 10,000 *Ostertagia ostertagi* and 66,000 *Cooperia oncophora* third-stage (L3) larvae. In study 2, twenty 4-6 months-old dairy calves grazed a second-year, pure chicory sward (CHI, n=10) or a ryegrass/white clover pasture (CTL, n=10) for 43 days. After 7 days on the diet all calves were infected with 20,000 *O. ostertagi* L3. In both studies, individual live weights were recorded and faecal egg counts were calculated as number of eggs per g of dried feces (FECDM). At day 56 (study 1) calves were killed for worm recovery. Live weights and log-transformed FECDM were analysed by ANOVA using repeated measurements. Log-transformed worm counts were analysed by t-test. **Results:** In study 1 daily live weight gains were 500 and 329 g/day in CHI and CTL animals, resp. (p=0.02). Mean FECDM were not significantly different between groups (p=0.19). *O. ostertagi* geo mean worm counts (SD) were 1599 (886) and 3752 (633) in CHI and CTL groups, resp. (p<0.001). *C. oncophora* geo mean worm counts were not statistically different between groups (p=0.10). In study 2 daily live weight gains were 366 and 748 g/day in CHI and CTL calves, resp. (p<0.001). Mean FECDM of CHI and CTL at day 20 post-infection were 1589 and 1474, resp. (p>0.05). From this point, egg excretion in CHI calves was significantly reduced and by day 36 post-infection FECDM was decreased by 48-65% compared to CTL (P<0.05). **Discussion:** Feeding on a chicory diet demonstrated a marked anthelmintic effect against *O. ostertagi* in both trials, whereas *C. oncophora* in study 1 was unaffected. Adult worm counts and egg excretion of *O. ostertagi* were significantly reduced in chicory-fed calves, suggesting that the survival of adult worms is reduced and/or worm expulsion is enhanced. The lower weight gains of CHI in study 2 probably reflect lower energy consumption and suggest that duration of grazing of pure chicory should be limited to selectively target established *O. ostertagi* adult populations.